AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1-3. ***(Canceled)***

4. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 1~~, wherein said extruder is a twin screw extruder.

5. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 1~~, wherein the temperature of the polymer in the extrusion die is achieved by heating the extrusion die externally.

6. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 1~~, wherein the temperature of the polymer in the extrusion die is achieved by the induction of heat from the interior of the extrusion die.

7. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 1~~, wherein the temperature (°C) of the polymer in the extrusion die is at least 15% above the crosslinking temperature (°C) of the polymer.

8. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 1~~, wherein the temperature (°C) of the polymer in the extrusion die is not higher than 60% above the crosslinking temperature (°C) of the polymer.

9. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 1~~, wherein the temperature (°C) of the polymer before entering the extrusion die is not higher than 30% above the crystallite melting point (°C) of the polymer.

10. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 1~~, wherein the crosslinking temperature (°C) of the polymer is approximately 30% above the crystallite melting point (°C) of the polymer.

11. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 1~~, wherein the crystallite melting point of the polymer is approximately 125-140° C.

12. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 11~~, wherein the crosslinking temperature of the polymer is approximately 165-185° C.

13. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 1~~, wherein the degree of crosslinking of the polymer on discharge from the extrusion die is above 60%.

14. ***(Canceled)***

15. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 1~~, wherein the tube ~~part~~ is maintained at a temperature above the crosslinking temperature after discharge from the extrusion die.

16. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 1~~, wherein the tube ~~part~~ is cooled after crosslinking.

17. ***(Currently Amended)*** The method of claim 30 ~~process of Claim 1~~, wherein **[[**the**]]** a melting pressure before entry to the extrusion die ~~is between~~ does not exceed approximately 700-1500 bar.

18-29. ***(Canceled)***

30. ***(New)*** A method for extruding a peroxide crosslinked polymer tube, comprising:

supplying a mixture to an extruder, the mixture comprising: a peroxide crosslinkable polymer, a crosslinking agent, and a stabilizing agent, wherein the peroxide crosslinkable polymer has a crystallite melting point and a crosslinking temperature;

heating the mixture in the extruder with an external heating unit to a temperature

above the crystallite melting point of the polymer but below the crosslinking temperature of the polymer;

controlling the temperature of the mixture in the extruder with the external heating unit and an internal cooling unit;

continuously feeding the mixture from the extruder to an extrusion die; and

heating the mixture in the extrusion die above the crosslinking temperature of the polymer to effect at least a partial crosslinking of the polymer in the extrusion die.